

HOUSE BILL REPORT

HB 1813

As Reported by House Committee On:
Education
Appropriations

Title: An act relating to expanding computer science education.

Brief Description: Expanding computer science education.

Sponsors: Representatives Hansen, Magendanz, Reykdal, Muri, Tarleton, Zeiger, Lytton, Haler, Senn, Harmsworth, Tharinger, Young, Walkinshaw, Stanford, S. Hunt and Pollet.

Brief History:

Committee Activity:

Education: 2/10/15, 2/19/15 [DP];

Appropriations: 2/25/15, 2/26/15 [DPS].

Brief Summary of Substitute Bill

- Requires the Superintendent of Public Instruction and the Professional Educator Standards Board (PESB) to adopt computer science learning standards.
- Requires the PESB to develop a K-12 computer science endorsement.
- Changes the types of endorsements that K-12 and certain certificated elementary educators may pursue to qualify for the Retooling to Teach Mathematics and Sciences Conditional Scholarship Program, and renames it the Educator Retooling Conditional Scholarship Program.

HOUSE COMMITTEE ON EDUCATION

Majority Report: Do pass. Signed by 20 members: Representatives Santos, Chair; Ortiz-Self, Vice Chair; Reykdal, Vice Chair; Magendanz, Ranking Minority Member; Muri, Assistant Ranking Minority Member; Stambaugh, Assistant Ranking Minority Member; Bergquist, Caldier, Fagan, Gregory, Griffey, Hargrove, Hayes, S. Hunt, Kilduff, Lytton, McCaslin, Orwall, Pollet and Springer.

Minority Report: Do not pass. Signed by 1 member: Representative Klippert.

This analysis was prepared by non-partisan legislative staff for the use of legislative members in their deliberations. This analysis is not a part of the legislation nor does it constitute a statement of legislative intent.

Staff: Robin Hammond (786-7291) Cece Clynch (786-7196).

Background:

Endorsements.

There are several pathways to endorsement and different types of endorsements. For example, academic endorsements and Career and Technical Education (CTE) endorsements differ in a fundamental way—a CTE endorsed teacher may only teach CTE courses, and these courses often will not apply toward core education requirements. There is no academic endorsement for computer science, only a CTE endorsement, which teachers may obtain by demonstrating to a teacher preparation program that they have experience in the field and have met the program's requirements.

Conditional Scholarship for Educators.

A conditional scholarship is a loan that is forgiven in whole or in part in exchange for service as a certificated teacher at a K-12 public school. The state forgives one year of loan obligation for every two years a recipient teaches in a Washington K-12 public school. When a recipient fails to continue with the required course of study or teaching obligation, the recipient must repay the remaining loan principal with interest.

The Retooling Mathematics and Sciences Conditional Scholarship Program requires a K-12 teacher, or certificated elementary educator who is not employed in a position requiring an elementary education certificate, to pursue an endorsement in math or science to be eligible for the program. The conditional scholarship amount is determined by the Student Achievement Council, which may not exceed \$3,000 per year, and is applied to the cost of tuition, fees, and educational expenses.

Summary of Bill:

Grant Program.

The Office of the Superintendent of Public Instruction (OSPI) oversees three new grants within the computer science and education grant program. The OSPI may award:

- a Computer Science Frontiers Grant to schools, school districts, educational service districts, or nonprofit organizations—a recipient must have supported under-represented students with computer science and have a viable plan for their future support;
- a Computer Science Educator Training Grant to educators, schools, school districts, educational service districts, and nonprofit organizations for professional development; or
- a Computer Science Technology Grant to schools and school districts to purchase or upgrade computer science course technology—the OSPI must prioritize schools and school districts with substantial enrollment of low-income, under-represented, or rural students.

The Computer Science and Education Grant Matching Account is created in the custody of the State Treasurer, to hold matching public and private funds for the three grants. The

account is funded by gifts, grants, or donations and matching funds appropriated by the Legislature. Expenditures of state money may not exceed the amount of private contributions.

Endorsements and Standards.

The OSPI and the Professional Educator Standard Board (PESB) must adopt computer science learning standards developed by a nationally recognized computer science education organization. The PESB must also develop standards for a K-12 computer science endorsement, which must facilitate dual endorsement in computer science and mathematics, science, or another related high-demand endorsement.

Conditional Scholarship for Educators.

The Retooling to Teach Mathematics and Sciences Conditional Scholarship Program is renamed the Educator Retooling Conditional Scholarship Program. A K-12 teacher, or certificated elementary educator who is not employed in a position requiring an elementary education certificate, may qualify for the conditional scholarship program by pursuing an endorsement in a subject or geographic endorsement shortage area, as defined by the Professional Educator Standards Board.

Appropriation: None.

Fiscal Note: Available.

Effective Date: The bill takes effect 90 days after adjournment of the session in which the bill is passed.

Staff Summary of Public Testimony:

(In support) Computer science and Science, Technology, Engineering and Math (STEM) related jobs are high paying and in high demand. In Washington, 50 percent of new jobs are computer science and technology related, with 20,000 current job openings. Nationally, 4.6 million jobs will be available, however only 3,000 out of 42,000 high schools provide computer science advanced placement courses. There are three times as many openings for computer science and technology jobs than qualified applicants. This bill is not about technology companies, as two-thirds of jobs for software engineers are outside of the technology sector in areas such as manufacturing and entertainment. Lack of qualified job applicants is a problem for this state; this translates into fewer opportunities for Washington citizens, less economic activity, and a significant loss of potential revenues for state and local government.

Computing is a fundamental element of everyday life, commerce, and most occupations in the modern economy. Courses in computer science are foundational. There is a social and economic imperative that all children have the opportunity to learn computer science. Female, low-income, and rural students are under-represented—low numbers of these students take the Advanced Placement exam—and they deserve access.

Teachers need ongoing and high-quality professional development. The most impactful way to increase student access to the field is through teacher training and retooling. It costs less than one student's college tuition to train a teacher who can teach this new field to 300 or more students. Teachers in STEM education need greater support, professional development, and technology. This bill is a step in the right direction; however, institutions of higher education also need support to retain faculty to meet student demand for computer science.

The acronym "CS&E" is known in many universities as Computer Science and Engineering, and this ambiguity should be addressed.

(With concerns) There is a need to advance computer science, provide technology to all students, and improve teachers' ability to teach STEM. In this era of McCleary, the Legislature should not begin new programs with small amounts of state funding. Small competitive grant programs provide opportunities to a limited number of students, which creates the problem of disparity of opportunity. If this is a real priority of the Legislature, the Legislature should amend the prototypical school model to include this program and fully fund it across the state. The Legislature should start with the Superintendent of Public Instruction's request to dramatically increase Materials Supplies and Operating Costs funding for technology by \$139 million to bring all schools up-to-date with technology.

(Opposed) None.

Persons Testifying: (In support) Representative Hansen, prime sponsor; Jane Broom, Microsoft; Hadi Partoni, code.org; Auliilani del la Cruz, Mariner High School; Melissa Westbrook, Seattle School Community Forum; Megan Schrader, TechNet; Julie Garnver, The Evergreen State College; and David Brenna, Professional Educator Standards Board.

(With concerns) Chris Vance.

Persons Signed In To Testify But Not Testifying: None.

HOUSE COMMITTEE ON APPROPRIATIONS

Majority Report: The substitute bill be substituted therefor and the substitute bill do pass. Signed by 29 members: Representatives Hunter, Chair; Ormsby, Vice Chair; Parker, Assistant Ranking Minority Member; Wilcox, Assistant Ranking Minority Member; Buys, Carlyle, Cody, Dent, Dunshee, Fagan, Haler, Hansen, Hudgins, S. Hunt, Jinkins, Kagi, Lytton, MacEwen, Magendanz, Pettigrew, Sawyer, Schmick, Senn, Springer, Stokesbary, Sullivan, Tharinger, Van Werven and Walkinshaw.

Minority Report: Do not pass. Signed by 2 members: Representatives G. Hunt and Taylor.

Staff: Jessica Harrell (786-7349).

Summary of Recommendation of Committee On Appropriations Compared to Recommendation of Committee On Education:

The creation of a new grant program called the Computer Science and Education grant program is eliminated.

Appropriation: None.

Fiscal Note: Available. New fiscal note requested on March 2, 2015.

Effective Date of Substitute Bill: The bill takes effect 90 days after adjournment of the session in which the bill is passed.

Staff Summary of Public Testimony:

(In support) Washington's economy is fueled by Science, Technology, Engineering and Math (STEM) related industries. Fifty percent of new jobs are computer science and technology related, with 20,000 current job openings. By 2018 there will be three times as many job openings in STEM fields as job applicants. There are 25,000 persistently unfilled jobs in high demand fields in Washington. This bill is not about helping technology companies; only one-third of computing jobs are for technology companies. For example, there is a shortage of software engineers in manufacturing, large retail, and aerospace.

Computer science is foundational and the investment in education can quickly boost the economy. Computer science education has a strong investment return. For every dollar spent on STEM education, there is a sevenfold return to the state. There should be a \$2 million appropriation per biennium to support teacher training because it is the critical piece of the bill that provides the most return.

This bill supports equity and access for underrepresented populations in computer science. Female, low income, and rural students are all underrepresented and deserve access to computer science education. Nine out of 10 voters strongly support computer science education in K-12 schools. Arkansas, Utah, and Kentucky are all implementing similar legislation, and Washington should lead the way.

Lack of qualified job applicants is a problem for this state, which translates into fewer opportunities for Washington citizens, less economic activity, and a significant loss of potential revenues for state and local government. Small businesses and startup companies may be constrained in their ability to grow by the lack of local and qualified workers.

(Opposed) None.

Persons Testifying: Representative Hansen, prime sponsor; Hadi Partovi, Code.org; Caroline King, Washington STEM; and Irene Plenefish, Microsoft.

Persons Signed In To Testify But Not Testifying: None.